THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID M. REBHAN and DAVID A. WIBBENMEYER

Appeal No. 95-3233
Application No. 08/094,477[1]

ON BRIEF

Before CAROFF, KIMLIN and PAK, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 3-6 and 10-13, all the claims remaining in the present application. Claim 10 is illustrative:

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[1] Application for patent filed July 19, 1993.

10. A process for the production of polypropylene comprising continuously contacting liquid propylene or a mixture comprising liquid propylene and one or more other alpha-olefins in one or more reaction zones, under gas phase polymerization conditions, with a catalyst system comprising (i) a solid particulate catalyst precursor, which includes magnesium; titanium; a halogen which is chlorine, bromine, or iodine, or mixtures thereof; and, as an inside electron donor, a carboxylic acid ester; (ii) a hydrocarbylaluminum cocatalyst; and (iii) as an outside electron donor a silicon compound containing at least one silicon-oxygen-carbon linkage,

with the proviso that the precursor alone is carried into the reaction zone(s) via a portion of the liquid propylene, the amount of said portion being about 0.1 to about 11 percent by weight based on the weight of the total liquid propylene and the flow rate of said portion being at least 110 pounds per hour and having a Reynolds number greater than about 20,000.

The examiner relies upon the following references as evidence of obviousness:

Brady, III et al. (Brady)	5,093,415	Mar. 3, 1992 (filed May 19, 1987)
Kondo et al. (Kondo) (Japanese patent application)	3-73,564	Nov. 22, 1991

Appellants' claimed invention is directed to a process for producing polypropylene that is characterized by appellants as an improvement over the process described in Brady, U.S. Patent No. 5,093,415. The purported improvement over Brady entails feeding the catalyst precursor, alone, into the reaction zone along with a portion of the liquid propylene

feed wherein the flow rate of the precursor/propylene has a Reynolds number greater than about 20,000.

Appellants submit at page 2 of their third Reply Brief, dated April 4, 1996, that "[t]he claims stand or fall together."

The appealed claims stand rejected under 35 U.S.C. § 112, first paragraph, as being based upon a non-enabling disclosure.[2] We will not sustain this rejection.

It is well settled that the examiner bears the initial burden of establishing lack of enablement under § 112, first paragraph, by compelling reasoning or objective evidence. In re Strahilevitz, 668 F.2d 1229, 1232, 212 USPQ 561, 563 (CCPA 1982); In re Marzocchi, 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971). Here, although the examiner correctly states that the Reynolds number is a function of four variables, the

[2] The § 112, first paragraph, rejection was set forth in the original Examiner's Answer of February 3, 1995. The second Supplemental Examiner's Answer of February 8, 1996, appears to be an entirely new statement of rejections of the appealed claims, and no rejection under 35 U.S.C. § 112, first paragraph, is set forth. However, inasmuch as the § 112 rejection has not been expressly withdrawn in either the Supplemental Examiner's Answer of May 4, 1995 or the second Supplemental Examiner's Answer of February 8, 1996, we will consider the rejection as an issue presently on appeal.

examiner has failed to set forth objective evidence or compelling reasoning that reasonably establishes that one of ordinary skill in the art would be unable to practice the claimed invention of feeding into the reaction zone a liquid feed comprising propylene and a catalyst precursor at the claimed Reynolds number. Accordingly, in the absence of such evidence or reasoning, we are persuaded that one of ordinary skill in the art would be able to attain the claimed Reynolds number by adjusting the diameter of the feed tube or the average velocity of the fluid feed (page 2 of Reply Brief of February 17, 1995).

Appealed claims 10-13 and 3-6 also stand rejected under 35 U.S.C. § 103 as being unpatentable over Brady alone, Brady in view of Kondo or Kondo in view of Brady.[3]

We concur with the examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the collective teachings of Brady and Kondo. Appellants apparently do not

[3] Inasmuch as the rejections over the combined teachings of Brady and Kondo subsume the rejection over Brady alone, we will limit our discussion to the examiner's rejection of the appealed claims over the collective teachings of Brady and Kondo.

dispute the examiner's factual determination that Brady discloses the claimed process of producing polypropylene with the exception of not disclosing the claimed Reynolds number for the combined feed of catalyst precursor and propylene. Brady does teach that the cocatalyst can be introduced into the reaction zone while suspended in a stream of liquefied monomer, such as propylene (column 10, lines 51-54), but Brady is silent with respect to the Reynolds number for the cocatalyst/monomer feed. However, since appellants contend that the claimed Reynolds number results in low average resin particle sizes and high resin bulk densities, and Brady discloses at column 12, lines 12-23, an average particle size and bulk density that essentially correspond to the values disclosed in appellants' specification examples, we find it reasonable to conclude that Brady employs a sufficiently high Reynolds number to obtain the desired average particle size and bulk density, i.e., a Reynolds number substantially as claimed. In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

While we find it unfortunate that appellants have not simplified the issues on appeal by making of record the actual

Reynolds number employed by Brady,[4] we agree with the examiner that Kondo would have supplied the requisite motivation for one of ordinary skill in the art to perform the Brady process at the claimed Reynolds number for the catalyst precursor/monomer feed. In a process for making polypropylene by introducing a catalyst precursor along with the propylene feed, Kondo teaches that the Reynolds number of the relevant feed should be greater than 3,000 which, as noted by the examiner, encompasses the claimed value of 20,000. It is well settled that where patentability is predicated upon a change in a condition of a prior art process, such as here, a purported change in Reynolds number, that change must at least be critical, i.e., it must lead to a new or unexpected result, and the burden of establishing such criticality rests on the applicant. See In re Ranier, 377 F.2d 1006, 1010, 153 USPQ 802, 805 (CCPA 1967); In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). As stated by our reviewing court in In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990):

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[4] We note that both the Brady patent and appellants' present invention share the same assignee, Union Carbide Chemicals and Plastics Co., Inc.

> The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims . . . . These cases have consistently held that in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. [Citations omitted].

Consequently, in the present case, appellants have the burden of establishing with objective evidence that operating the Brady process at the claimed Reynolds number produces unexpected results viz-à-viz a Reynolds number that one skilled in the art would have used in the Brady process.

While appellants invite comparison of specification Runs A and D with Runs B and C; Run E with Run F; Run G with Run H; and Run I with Run J, appellants have not proffered any objective evidence which provides a meaningful side-by-side comparison with the closest prior art, i.e., appellants have not presented a comparison of processes within the scope of the appealed claims and processes fairly taught by either Brady or Kondo. In re Johnson, 747 F.2d 1456, 1461, 223 USPQ 1260, 1263-64 (Fed. Cir. 1984). Moreover, we find it significant that all the runs in appellants' specification utilize a Reynolds number considerably greater than the

claimed 20,000. The smallest Reynolds number of the specification runs is 30,000 (Run I), which is 150 percent greater than the claimed 20,000. Hence, the data is not commensurate in scope with the degree of protection sought by the appealed claims. In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983).

We have not ignored appellants' argument that Kondo uses active catalysts together with the propylene feed, whereas appellants use precursor alone with the propylene feed. However, as correctly explained by the examiner, Kondo discloses at page 6 of the English translation that a catalyst component alone, a precursor, can be fed along with the monomer feed (lines 17-24). Also, although appellants contend that "Kondo uses **all** of the liquid propylene in the catalyst feed" (page 3 of third Reply Brief), claim 1 of Kondo recites that the catalyst is introduced together with "at least part of the total amount of alpha-olefin to be fed."

In conclusion, based on the foregoing, the examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

MARC L. CAROFF Administrative Patent Judge	)	
EDWARD C. KIMLIN Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
CHUNG K. PAK Administrative Patent Judge	)	

CLM

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